

Bellwork: 3/13/13

Perform the indicated operation:

1) $(9-4i)^2$

$$(9-4i)(9-4i)$$

$$81-36i-36i+16i^2$$

$$81-72i+16i^2$$

$$81-72i-16$$

$$65-72i$$

Page 1

Section 8.2 - Graphing Rational Functions using transformations

General Form: $y = \frac{a}{x-h} + k$

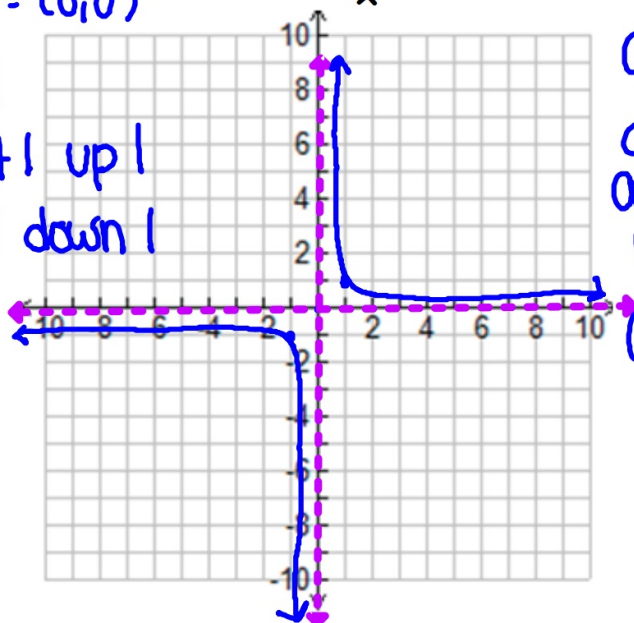
Graph of $y = \frac{1}{x}$

$h, k = (0, 0)$

$a = 1$

right | up |

left | down |



Things to notice:

asymptotes:

dotted lines graph approaches but never touches

$(h, k) \Rightarrow$ make dotted lines

Page 2

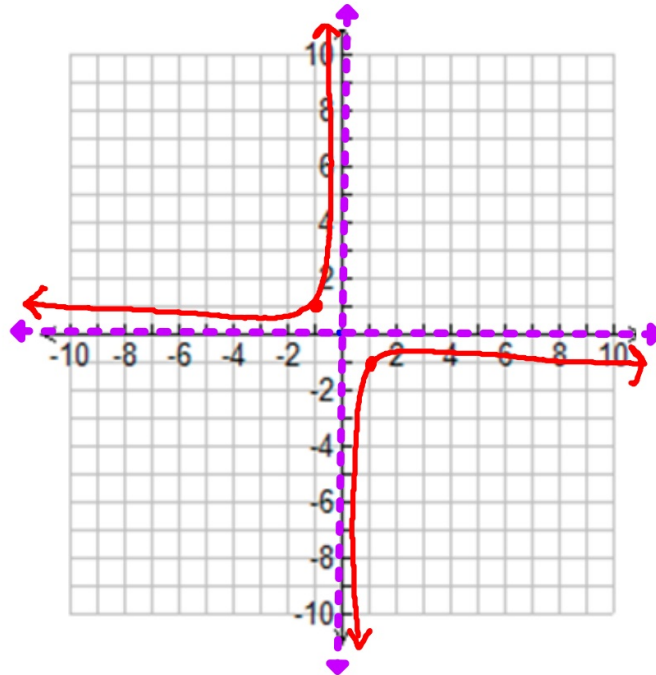
example 2: $y = \frac{-1}{x}$

$h, k = (0, 0)$

$a = -1$

right 1 ~~down~~ 1

left 1 ~~up~~ 1



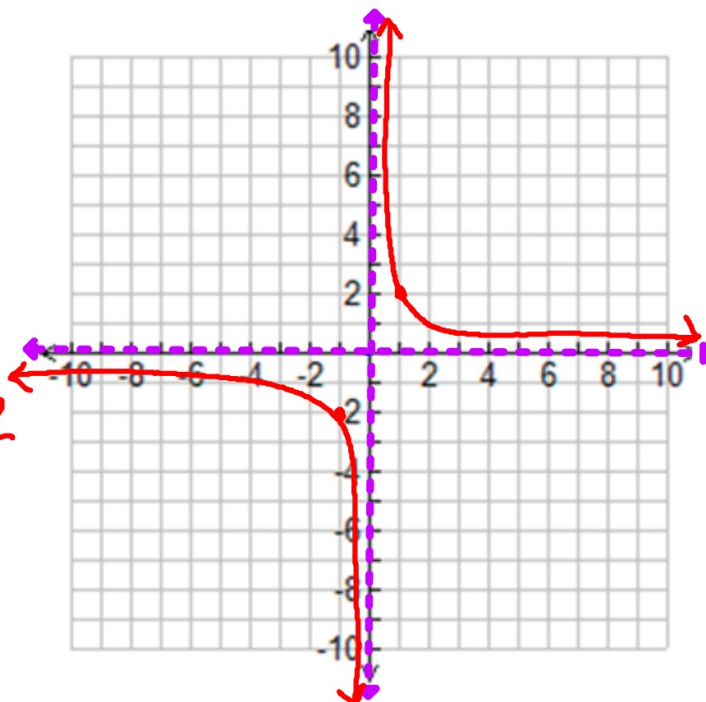
example 3: $y = \frac{2}{x}$

$h, k = (0, 0)$

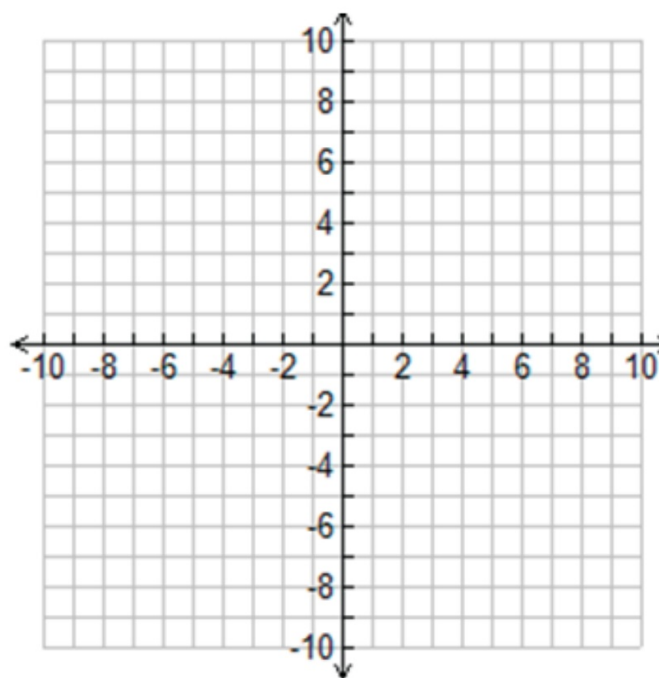
$a = 2$

right 1 up 2

left 1 down 2



example 4: $y = \frac{-2}{x}$



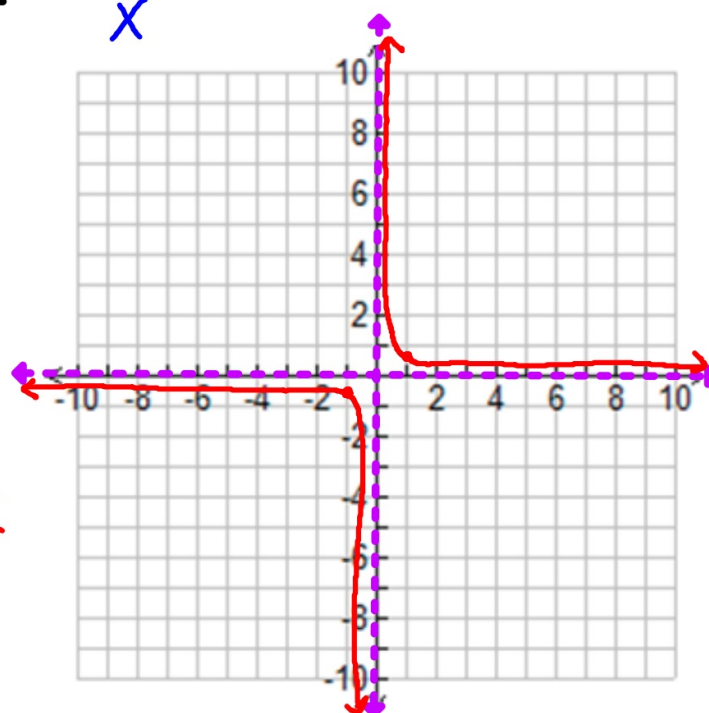
example 5: $y = \frac{1}{2x}$ $\frac{\frac{1}{2}}{x}$

$h, k = (0, 0)$

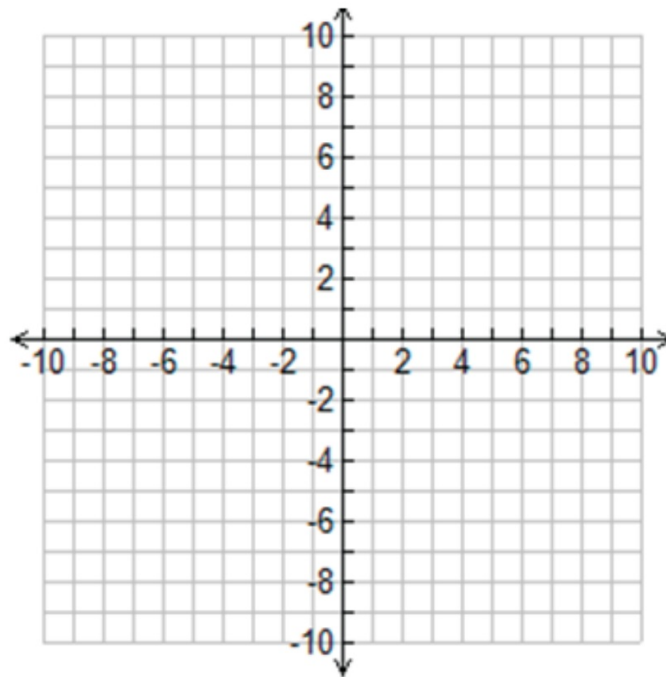
$a = \frac{1}{2}$

right ↓ up $\times \frac{1}{2}$

left ↓ down $\times \frac{1}{2}$



example 6: $y = \frac{-1}{2x}$



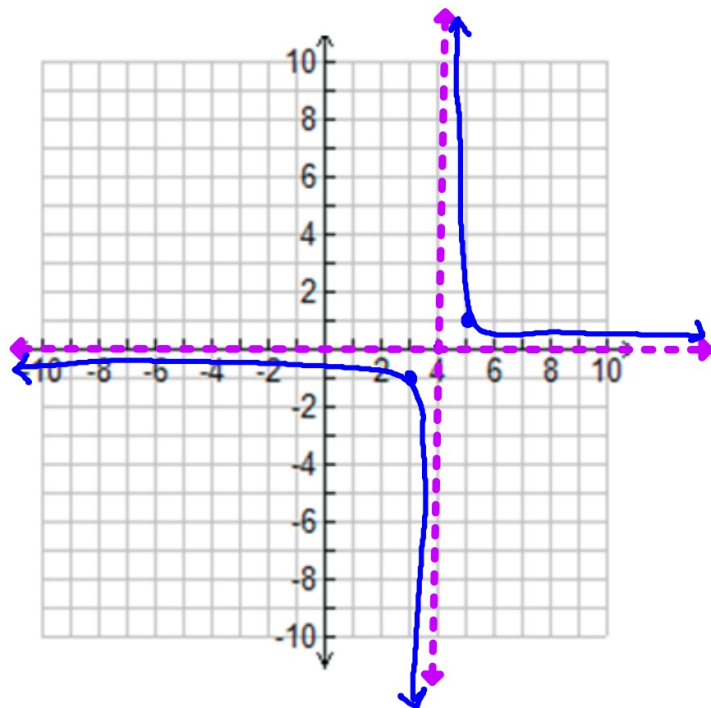
example 7: $y = \frac{1}{x-4}$

$h, k = (4, 0)$

$a = 1$

right 1 up 1

left 1 down 1



example 8: $y = \frac{1}{x} + 3$

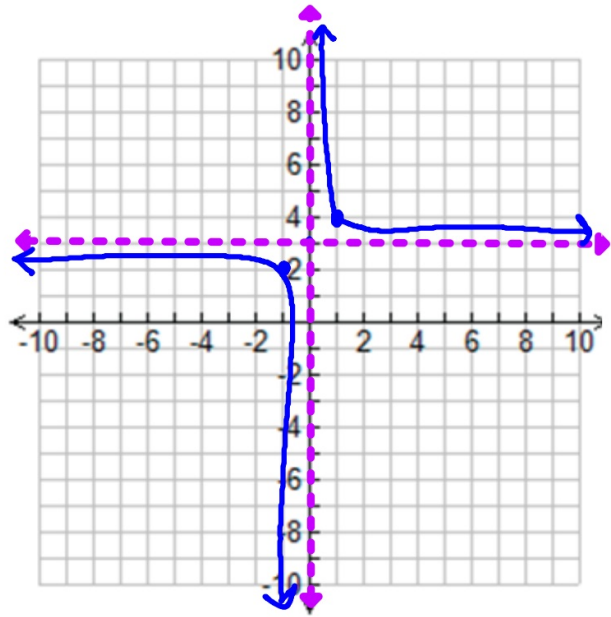
$$y = \frac{1}{x} + 3$$

$$h, k = (0, 3)$$

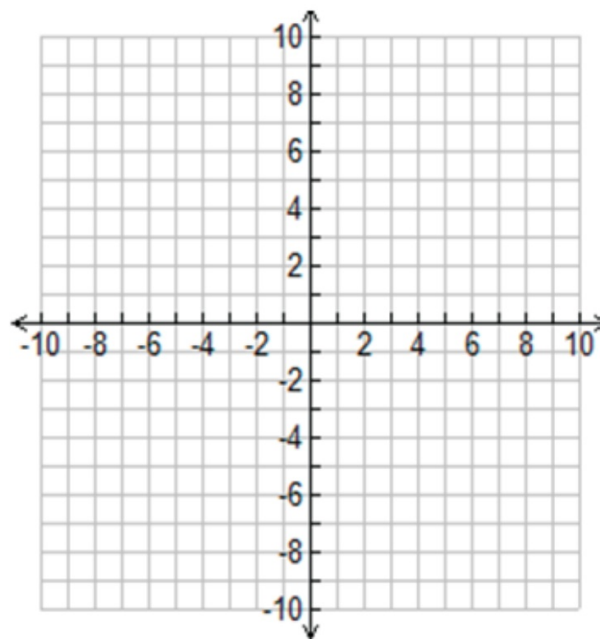
$$a = 1$$

right 1 up 1

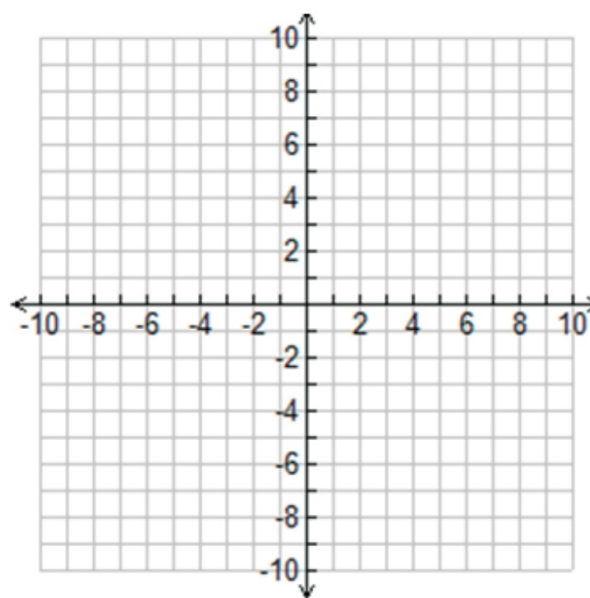
left 1 down 1



example 9: $y = \frac{1}{x+5} - 2$



example 10: $y = \frac{1}{x-2} + 4$



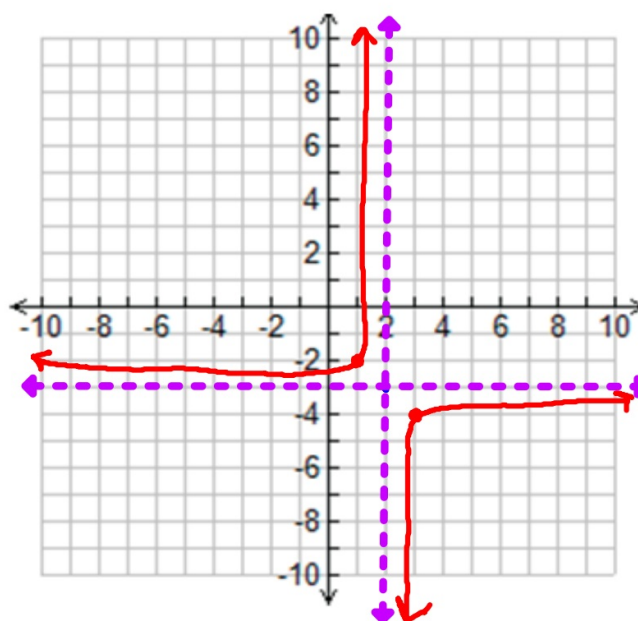
example 11: $y = \frac{-1}{x-2} - 3$ $y = \frac{-1}{x-2} - 3$

$h, k = (2, -3)$

$a = -1$

right 1 ~~up~~ down 1

left 1 ~~down~~ up 1



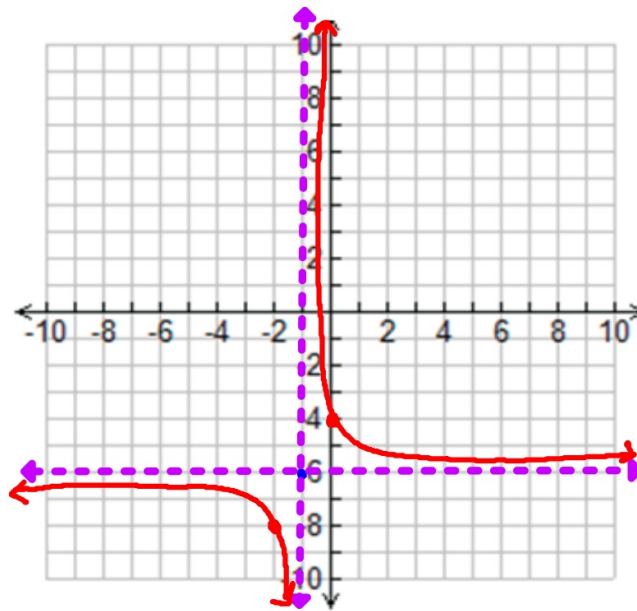
example 12: $y = \frac{2}{x+1} - 6$ $y = \frac{2}{x+1} - 6$

$h, k = (-1, -6)$

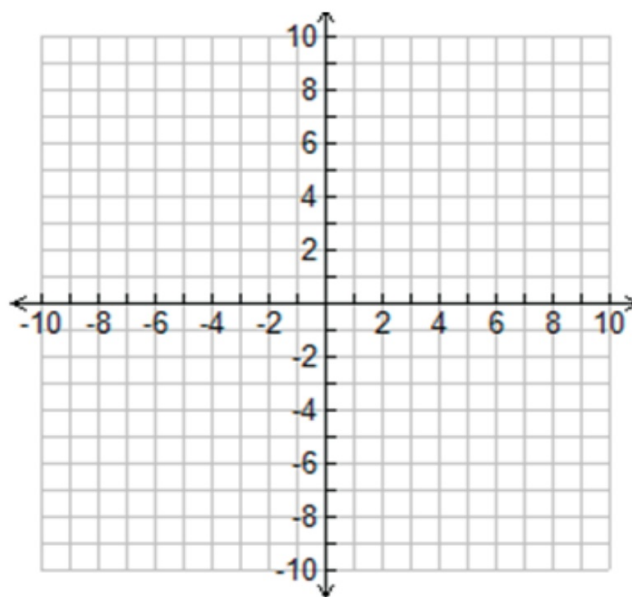
$a = 2$

right 1 up $\times 2$

left 1 down $\times 2$



example 13: $y = \frac{1}{2(x+1)} - 4$



Homework: pg 535 #16-22

